



Denver Water

Operations & Maintenance Division

Standard Operating Procedure

Subject : Conduit Chlorination Procedure

Item :

Date : November 2, 1999

Revision Date:

Purpose

- A. During the construction of a new water main, or after an extensive repair, there is an opportunity for contamination of the main. Therefore, effective disinfection is necessary before the line is released and placed into service.

Policy

- A. To be developed.

Equipment

- A. Source to Portable Chlorination Tank:
1. Fire Hydrant with 2½" MFHA (2½ inch **Male Fire Hose Adapter**).
 2. Upstream Isolation Valve on existing main with 2½" MFHA.
- B. Pump Injection Point:
1. Isolation Valve (<5 ft.) downstream from the Butterfly Valve with 2 ½" MFHA.
 2. Fire Hydrant (<5 ft.) downstream from the Butterfly Valve,
*If the hydrant is in good condition, this method of injection is approved.
- C. Discharge Point on Main:
1. Isolation Valve upstream from Butterfly Valve on main or conduit.
 2. Discharge pipe or 1¼" corp with 90-degree angle fitting.
 - a) When chlorinating a conduit, use the 6" discharge.
 - b) When chlorinating a main, use the 1¼" corp or whatever is available.
 3. The discharge pipe will be raised at least 24" above ground level at a 90-degree angle.
*Fire hydrants are **not** used as a source for sample collection.

Procedure

- A. Connect source from hydrant or isolation valve and connect to fill line for the Cl_2 tank.
- B. Charge hydrant/isolation valve and fill the Cl_2 tank.
- C. Connect source from the pump discharge to isolation valve on main or conduit.
- D. Open pump valve and isolation valve injection point.
- E. Open blow-off at isolation valve before charging main with chlorine.
- F. Start engine and commence pumping chlorinated water into the water main or conduit.
- G. Test residual chlorine at the blow-off for 100 mg/L with Litmus Paper Test Strips.
- H. Once the required chlorine residual is satisfied, shut off the isolation valve.
- I. Shut off engine and close isolations valve at injection point.
- J. Disconnect all fittings and hoses.
- K. The chlorine has a **24 hour** contact time, starting after the chlorination is completed.
- L. Schedule for dechlorination and bacteriological sample collection for the following day.

III. See attached **Figure 1** for details:

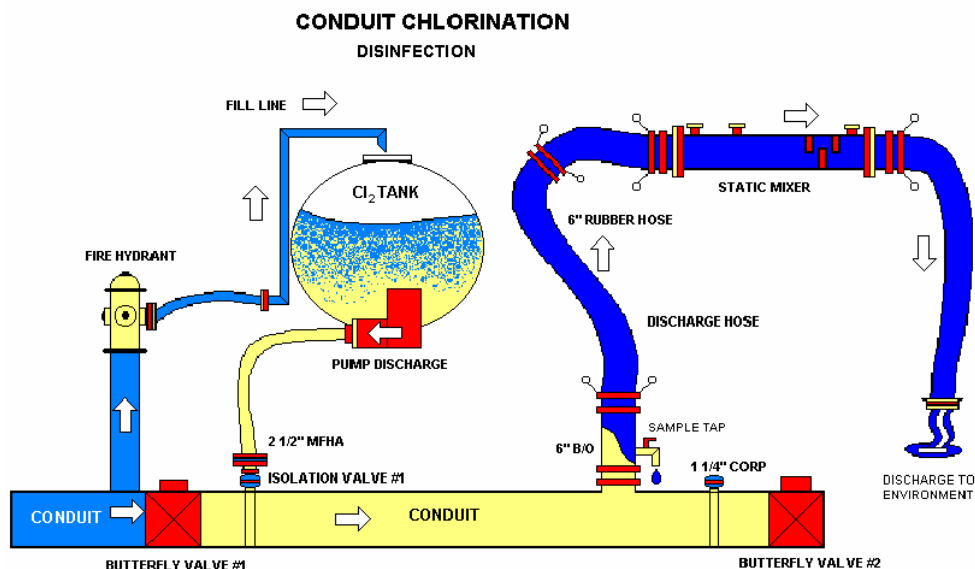


Figure 1